AMENDMENTS TO THE CLAIMS

Claims 1-5. (Cancelled)

6. (Currently Amended) A method for efficiently generating a novel viewpoint image of a scene, the method comprising:

acquiring a pair of background images of the scene;

generating a dense background correspondence field based on the background images;

acquiring a pair of real-time images of the scene;

~~detecting movable objects in the real-time images based at least in part on the background correspondence field;~~

warping a first image of the real-time image pair into correspondence with a second image of the real-time image pair based on the dense background correspondence field;

differencing the second real-time image and the warped first real-time image;

determining that difference values above a threshold correspond to pixels associated with novel objects;

generating new correspondence data based ~~at least in part~~ on a correspondence search between the first and second real-time images, wherein the correspondence search is confined to the pixels associated with the ~~movable~~ novel objects; and

warping ~~at least one of the~~ a real-time ~~images~~ image based ~~at least in part~~ on the new correspondence data ~~in order~~ to create the novel viewpoint image.

7. (Cancelled)

8. (Currently Amended) The method of claim 6, wherein the generating new correspondence data step further comprises:

spatially grouping the pixels associated with the ~~detected movable~~ novel objects;

determining a distance between each spatial group and the background; and

generating the new correspondence data based at least in part on the distance.

9. (Currently Amended) The method of claim 6, further comprising integrating the new correspondence data into the dense background correspondence field.

10. (Currently Amended) The method of claim 9, further comprising repeating the ~~steps of~~ acquiring ~~a pair of real-time images~~, ~~detecting movable objects~~ warping, differencing, determining, generating ~~new correspondence data~~, and integrating ~~the new correspondence data in order to refine the background correspondence field~~ steps.

11. (Currently Amended) The method of claim 10, wherein the repeating [[step]] continues until a difference between the new correspondence data and the dense background correspondence field is below a threshold.

12. (Currently Amended) The method of claim 10, wherein the repeating [[step]] continues until a time limit expires.

13. (Currently Amended) A system for efficiently generating a novel viewpoint image of a scene, the system comprising:

a plurality of cameras configured to capture at least partially overlapping images of the scene; and

a processor configured to:

generate a dense background correspondence field based on background images captured by the cameras;

warp a first subsequent image from a first camera of the plurality of cameras into correspondence with a second subsequent image from a second camera of the plurality of cameras based on the dense background correspondence field, wherein the first and second subsequent images are captured simultaneously;

detect a new ~~objects~~ object in the first subsequent ~~images captured by the cameras based at least in part on the background correspondence field~~ image based on differences in corresponding pixel values of the first and second subsequent images;

generate new correspondence data based ~~at least in part on a result of the detecting step~~ on a correspondence search between the first and second subsequent images, wherein the correspondence search is confined to the pixels associated with the novel objects; and

warp ~~at least one of the subsequent images~~ at least one of the subsequent images based at least in part on the new correspondence data to create the novel viewpoint image.

14. (Cancelled)

15. (Cancelled)

16. (Previously Presented) The system of claim 13, wherein the cameras are configured to continuously capture images and the processor is configured to continuously generate novel viewpoint images based on the continuously captured images.

17. (Previously Presented) The system of claim 16, further comprising an output device configured to output a video signal comprising the continuously generated novel viewpoint images.

18. (New) The system of claim 6, wherein a novel object appears in the pair of real-time images but does not appear in the pair of background images.

19. (New) The system of claim 6, wherein the differencing step comprises computing a difference between corresponding digital pixel values in the first and second images of the real-time image pair.

20. (New) The system of claim 6, wherein the dense background correspondence field comprises a plurality of vectors, each vector corresponding to the translation of a pixel in the first image of the pair of background images to a corresponding pixel in the second image of the pair of background images.

21. (New) The system of claim 20, wherein the dense background correspondence field comprises substantially as many vectors as there are pixels in the first image of the pair of background images.

22. (New) The system of claim 21, wherein the dense background correspondence field excludes vectors corresponding to occluded pixels.

23. (New) The system of claim 13, wherein differences in corresponding pixel values of the subsequent images above a predetermined threshold correspond to new objects.

24. (New) The system of claim 13, wherein the new correspondence data comprises a plurality of vectors, each vector corresponding to the translation of a pixel in the first subsequent image to a corresponding pixel in the second subsequent image.

25. (New) They system of claim 24, wherein vectors associated with the new object are derived from the correspondence search step and other vectors are derived from the dense background correspondence field.